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GEOGRAPHIC SCHOOL BULLETINS

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(The National Geographic Society is a scientific and educational Society, wholly altruistic, incorporated as a non-commercial institution for the increase of geographic knowledge and its popular diffusion. General Headquarters, Washington, D. C.)

April 24, 1944. Vol. XXII. No. 39.

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Official Photograph U. S. Navy

THE ALEUTIANS WEATHER KITCHEN STEWS UP SOUP FOR U. S. PLANES

U. S. fliers find the air thick as soup in the Aleutian Islands, in a climate of fog, hail, sleet, and heavy overcast. Scientists explain the bad-tempered weather as a result of the Aleutian low-pressure area, a sort of gigantic dimple in the earth's atmosphere over the island chain. Into this basin where atmospheric pressure is low, high-pressure regions dump their winds. This continual turbulence produces storms and rough weather. Aerial reconnaissance—the mission of this U. S. Navy flying boat—becomes a grim job of hide-and-seek, with the weather impartially handicapping both sides. Temperatures are not unusually low; the coldest may be no less than 5 degrees above zero. But the perpetual dampness makes the cold more penetrating to the Yanks who are stationed at Aleutian bases (Bulletin No. 2).

GEOGRAPHIC SCHOOL BULLETIN

HOW TEACHERS MAY OBTAIN THE BULLETINS

The Geographic School Bulletins are published weekly throughout the school year (thirty issues) and will be mailed to teachers in the United States and its possessions for one year upon receipt of 25 cents (stamps or money order); in Canada, 50 cents. Originally entered as second-class matter January 27, 1922; re-entered as of April 27, 1943, Post Office, Washington, D. C., under Act of March 3, 1879. Copyright, 1944, by National Geographic Society, Washington, D. C. International copyright secured. All rights reserved. Quedan reservados todos los derechos.

War-Changed Romania a Battlefield Again

WITH Russian and Axis forces fighting on Romanian soil, the Balkan kingdom of Romania now faces another of those territorial gambles of war, in which the country has been at times a dramatic winner, at times a hard-hit loser.

As a partner of the victorious Allies in 1914-18, Romania gained more than enough land to double its area. By the end of 1940, although a member of the then successful Axis bloc, it had been forced to surrender to former owners the major share of its previous winnings.

Again in 1941, when Axis forces overran the Soviet Union's Ukraine, Romania not only recovered part of the 1940 cessions but also won an extra prize in a slice of the U.S.S.R. east of the Dnestr River. This year Red Army victories have reclaimed the Ukrainian territory captured by Nazi and Romanian forces, and Romania's border areas beyond are being occupied by Soviet troops.

Border Lands Are Vulnerable

In terms of physical geography, most of the border sections held by Romania between the two world wars could be considered poor military risks.

Bessarabia, for example, adjoining the Soviet Union, is open rolling country and offers little in the way of natural defense. This region was under Russian rule almost continuously between 1812 and 1918. In the turbulent days of the Russian revolution and counterrevolution, it was occupied by Romanian troops and later turned over to Romania by a treaty which the United States did not sign. The Soviet Union has never recognized the transfer.

South of Bessarabia along the Black Sea coast lies the Dobruja area, which Romania took from Bulgaria after the Balkan War of 1913. This is also hard-to-defend open land. It is dry, treeless steppe in the south, with the Danube's flat delta coast in the north.

In the west lies Transylvania, a district which has long been claimed by Hungary. Transylvania is made up of the broad Transylvania plateau and fringing plains, including the fertile Banat region disputed between Romania, Hungary, and Yugoslavia. The plains are freely accessible from the west, while the central plateau is approached by easy mountain passes.

Romania's Core Is a Mountain Fortress

In contrast to the vulnerable border lands, the Romanian core, as originally established through the union of the principalities of Wallachia and Moldavia, is essentially a mountain stronghold. It consists of a section of the Carpathians and the Transylvanian Alps, with foothills sloping to productive lowlands. Its remote heights and sheltered valleys have been havens for refugees fleeing the many invading hordes who have made Romania a corridor and a battlefield.

From around the mountain heart of Romania, big chunks of territory were clipped in 1940. To Soviet Russia went Bessarabia and northern Bucovina; to Hungary a large section of Transylvania; to Bulgaria the southern Dobruja.

This transfer of nearly 40,000 square miles of territory also involved the shifting of some 4,000,000 people. Many of them were Romanians; the others were former minority groups. The nation's aliens—estimated at one-quarter to one-third of Romania's total population of nearly 20,000,000—included Magyars, Germans, Ruthenians, Russians, Bulgarians, Jews, and Turks.

UMI

Isobel Wylie Hutchison

HARBORS IN THE ALEUTIANS REVEAL THEMSELVES AS DROWNED MOUNTAIN VALLEYS

The islands of the strung-out Aleutians chain are the peaks of a drowned mountain range protruding from Pacific waters. The loftiness of this ocean-buried range is indicated by the fact that the highest land point rises more than 9,000 feet above the surface of the water while the submerged slopes drop sharply into the Aleutian Trough, one of the deepest sea-bottom canyons of the Pacific. This gives the disguised mountains a hidden altitude of more than four miles above the ocean floor. Atka, the largest island in the Andreanof group near the central part of the chain, is a typical knot of sunken mountains; isolated peaks form smaller islands in the adjacent waters. A winding valley flooded with sea water forms Nazan Bay. This protected harbor was home, before the war, for a few dozen villagers, chiefly native Aleuts, whose houses hugged the waterfront in a cove in the shelter of a mountain (left of center). Islanders were evacuated by U. S. forces when bases were built in the Andreanofs for Yanks defending the northwestern approaches to the U. S. via the Aleutian back door (Bulletin No. 2).

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General Headquarters, Washington, D. C.

Where Are the Yanks? 9. The Aleutians

(This is the ninth in a series of articles about the regions where American service men and women are stationed.)

IF THE Yanks in the Aleutian Islands wanted to boast, they might say they fought and conquered the Japs with one hand tied behind them. The tied hand was busy battling nature in a war theater that has few equals in discomfort.

In the tug-of-war between June, 1942, and August, 1943, that followed the Japanese sneak landings at the western tip of the Aleutian chain, virtually every news report of action mentioned fog, wind, sleet, driving rain or sudden blizzard.

The Aleutian Islands string out a thousand miles of steppingstones from the Alaska mainland toward northern Asia (map, next page). Attu, at the end of the line, is farther west of Portland, Oregon, than Portland, Oregon, is west of Portland, Maine.

On a flat map the Aleutians' position is deceptive. Although they appear far to the north and remote from Pacific centers of power, they actually lie between Japan and northwestern United States. The American base at Dutch Harbor, on Unalaska, is 40 miles south of the direct route between Tokyo and Seattle.

Volcanoes and Williwaws Are Unpredictable

The Aleutian chain made a battlefield that was freakish even among the fantastic war fronts of this world-wide conflict. It rises from the sea in five main sets of islands—rugged volcanic formations of fire and ice, rocky stretches of desolation contrasting with green and flowering fields. The group has been called America's Garden of Fireworks. Behind the mists and fogs that usually obscure the islands is unrolled a panorama which includes active volcanoes crowned by swirling halos of smoke, boiling springs, creased and tumbled lava beds.

The Aleutian area is a winter-weather factory where rain, snow, and violent storms are "manufactured for export" to Canada and the United States. Cold on the islands is not severe despite their northern location. Their unpleasant dampness and fog result from the meeting of air masses affected by the warm ocean currents from the south and the icy waters of the Bering Sea. Especially dreaded is the williwaw, a sudden fierce wind that often sweeps out of the coastal mountains at hurricane speed, wrecking planes, capsizing ships, and scattering lumber.

Aleuts Are Russianized Cousins of Eskimos

Military operations in the Aleutians were complicated by the region's peculiar hazards for sea, land, and air traffic. Naval skirmishes have had to adjourn because of fog. Bombers, timing their blows by careful weather charts, played hide-and-seek with the enemy.

Now pilots on routine patrol flights are still plagued with low ceilings and high winds, poisonous gases and tricky air currents that may rise from volcanic craters. Spongy, boggy ground, rolling hills covered with moss and grass, sharp stones, and volcanic fissures hamper wheel and foot travel, and call for steel mats on emergency landing fields. The islands have few good harbors, and ships passing along the shores must be alert for shoals, treacherous tide rips, and whirlpools.

Before the war, the lonely Aleutians were home to about a thousand inhabitants. Most of the native Aleuts—swarthy, Russianized relatives of the Alaskan Eskimo—lived by fishing, hunting, and fox raising.

UMI

As a fighting member of the Axis (Romania, unlike Bulgaria, is at war with the Soviet Union), this nation has contributed both men and supplies to the Nazi cause. One estimate put Romanian casualties at 400,000 by the end of 1942.

For war-vital petroleum in appreciable quantities, Romania is the only source now available to the Axis. After the Soviet Union, Romania is the leading oil country of Europe. Peak Romanian production came in 1936, when it went above 63,000,000 barrels.

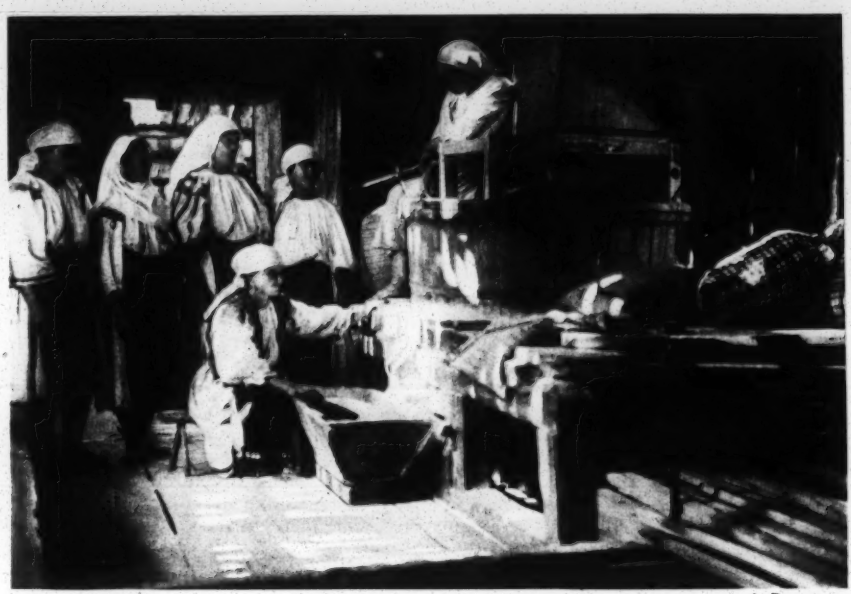
Also of value to the Axis war chest have been Romania's other minerals, such as copper, iron, coal, lead, and zinc; its foodstuffs, forest products, and livestock. Most of the mineral supplies are relatively small, but any amount of scarce essential materials has been welcomed by Axis users. Romanian coal is used to conserve the more precious oil. Large deposits of natural gas help operate wartime factories.

In food crops, Romania—predominantly a farming country—is one of the world's important granaries (illustration, below). Corn and wheat are the chief food exports, with barley, rye, and oats following.

Note: Romania is shown on the National Geographic Society's Map of Central Europe and the Mediterranean. A price list of maps may be obtained from the Society's Washington, D. C., headquarters.

For further information, see "Caviar Fishermen of Romania," in the *National Geographic Magazine* for March, 1940*; and "The Spell of Romania," April, 1934*; and "Bumper Bessarabia on Romania's Give-and-Take Frontier," in the GEOGRAPHIC SCHOOL BULLETINS, January 31, 1944. (*Issues marked by an asterisk are included in a special list of Magazines available to teachers at 10¢ each in groups of ten.*)

Bulletin No. 1, April 24, 1944.



J. Berman

THE ROMANIAN WOMAN GUIDES THE GRAIN FROM FIELD TO KITCHEN

Barefoot farm women of rural Romania do their share of the work in planting seed, reaping the harvest, and seeing the grain through the mill before they bake their bread. These women have brought a portion of the family harvest in sturdy plaid bags to the neighborhood mill. While the heavy millstones on the floor above grind the grain, the women wait below and watch the coarse, fragrant meal pour into the bin (center). The women's draped kerchiefs, reminiscent of ancient Roman matrons' veils, are among the reminders that the country was once a Roman province. A nation of farmers, Romania produced more than 12 million tons of grains a year before the war. Corn accounted for about half that tonnage, with wheat ranking next. Grains ranked next to oil among the country's exports.

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General Headquarters, Washington, D. C.

Volcanoes Rehearsed Rabaul for War's Bombing

FOR bombed and battle-scarred Rabaul, on New Britain Island, the hammering of Allied forces has been an intensification of the battering it has for years received from nature. This commercial metropolis of the Bismarck Archipelago lies in the northeastern curve of Simpson Harbor, the egg-shaped bulge of Blanche Bay at the island's northeast tip.

Rabaul's prewar population—some 8,000 Papuans, Europeans, Chinese, and Japanese—had for years been bombarded with dust, ashes, and stones from volcanoes. Earthquakes, the accompanying giant waves sweeping inland from the sea, and volcanic eruptions have been dress rehearsals for the battering the little tropical garden town has received from Solomons-based United States bombers.

Terminal of Jap Supply Line from Tokyo

Until 1941 Rabaul was the seat of the Administration offices of Australia's Mandated Territory of New Guinea, with which the Bismarck Archipelago is included. The town was founded in 1910—during Germany's ownership of the archipelago—by a German shipping firm as a port of call for ships of their Sydney-Hong Kong run. The harbor is deep enough to provide anchorage for ships of all types. It was Rabaul's position between the Solomons and New Guinea, south of the Jap naval base at Truk, which gave it value to Japan as terminal of the Tokyo-Truk-Rabaul supply line to the southwest Pacific.

Rabaul lies between the harbor and the slopes of Mt. Kombiu. The broad streets, in peacetime, were shaded by mango, poinciana, and feathery casuarina trees. The rows of shops in Chinatown, at the eastern edge of the town, constituted the only definite business section. Offices, warehouses, and residences were scattered over the landscape, screened behind hedges of crotons and hibiscus, draped with scarlet and magenta bougainvillea. Red-roofed white Government House, broad-verandaed bungalows, and a hospital stood on Namanula Hill.

More like a tropical garden than a town, Rabaul had nevertheless many characteristics of a modern city—telephones, electric lights, several government schools for natives and one for Europeans, a library, a botanic garden, and a museum devoted to the tools, weapons, and arts and crafts of the Papuan natives. In the center of the town was a park with tennis courts, a cricket oval, bowling greens, and football and baseball grounds. To the south was the Lakunai race track and beyond, at Bridges Point, the Lakunai air field.

Rabaul Had Prewar Housing Shortage

The Health Department maintained a laboratory and a medical staff which supervised sanitation and plantation hospitals in the area. Five religious denominations maintained mission stations in Rabaul and the surrounding country.

Housing in Rabaul was a problem even in peacetime. Newcomers often had to remain in hotels for months while waiting for a house to be vacated.

Small steamers maintained inter-island service. Rabaul was the only port in the Mandate with regular overseas shipping service. Copra was the chief export. A start had been made in coffee and cocoa raising. Fish were both trapped (illustration, next page) and speared by Papuan residents of the town and near-by villages.

Rabaul lies in the midst of a cluster of volcanic mountains. Kombiu (The

UMI

Residents from the "States" included a few traders, teachers, missionaries, and sheep ranchers. The food value of Aleutian grass is indicated by the success of one American-owned ranch, which grazed about 15,000 sheep.

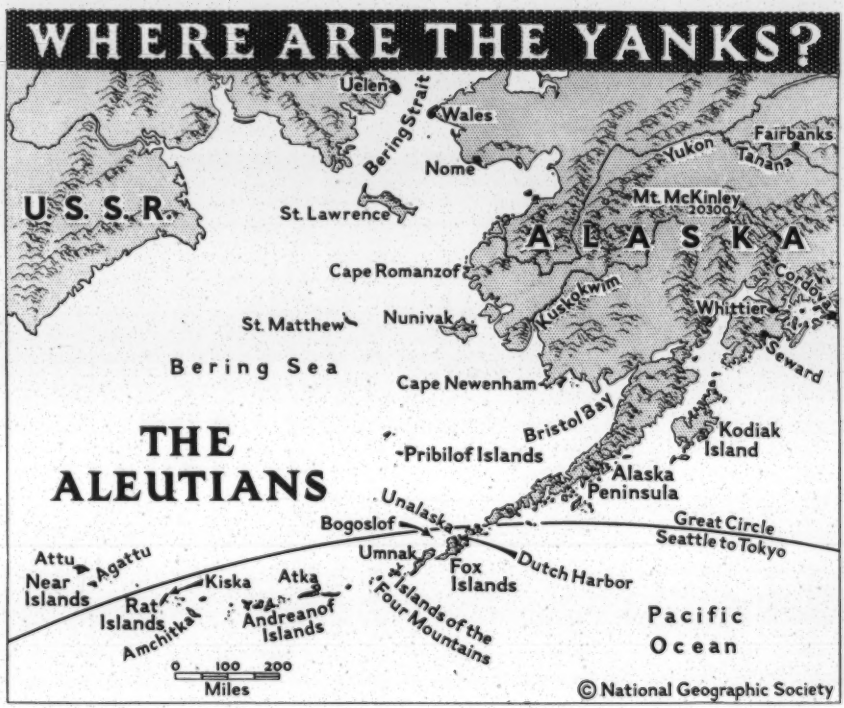
The Army and Navy have made life as comfortable as possible for men on duty at these Aleutian bases, which are among Uncle Sam's most strategic outposts. In heavy winter clothing, sailors and soldiers in Aleutian service dress alike and keep warm. Behind storm doors, half-barrel-shaped Quonset huts—built of corrugated iron and insulated with pressed fiber—make snug quarters.

Looking back on her disastrous venture, Japan must figure that the loss of her Aleutian hold has not only wiped out the chance of land-based attack on Alaska and the west coast of the United States, but has left open the essential United Nations supply routes across the Pacific to the Soviet Union.

Note: Sixteen full-color reproductions of paintings by William F. Draper, showing scenes at U. S. bases in the Aleutians, were published in the *National Geographic Magazine* for August, 1943, accompanied by an article entitled "A Navy Artist Paints the Aleutians."

See also "Riddle of the Aleutians" in the *National Geographic Magazine* for December, 1942; "Bizarre Battleground—the Lonely Aleutians," September, 1942; and "Our Air Frontier in Alaska," October, 1940.*

Bulletin No. 2, April 24, 1944.



THE ALEUTIANS BARRICADE THE NORTH PACIFIC DOOR TO THE WEST COAST

Though they appear remote from the United States, the Aleutians block the Great Circle route which is the most direct path between Tokyo and Seattle. This geographic fact explains the Japs' defeated attempt to hold Attu and Kiska. The Near, Rat, Andreanof, Four Mountains, and Fox Islands groups include most of the Aleutians. The Komandorskie group, at the western tip of the chain off Kamchatka, belongs to the U. S. S. R. This great island arc has shared the history of the two nations dominating the continental shores between which it lies. At first the Aleutians were Russian, discovered by the unlucky explorer Vitus Bering in 1741 and exploited by Russian fur traders. They came under U. S. rule with the purchase of Alaska. A souvenir of the Aleutians' past is Bogoslof, the island which consists of the head of an active volcano protruding from the sea; explosions and eruptions are frequently changing its size and shape, showing how volcanic forces built the islands between Bering Sea and the Pacific.

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Elusive Radium: A Metal of Paradoxes

SEARCH in the bombed ruins of the Marie Curie Radium Therapy Hospital in London adds an overseas chapter to a modern detective story that promises to run forever. It is the world-wide record of radium lost and found.

About the time the London hospital was bombed and its precious radium supply buried under rubble, three tiny tubes of radium were lost in New York City by a patient who left a doctor's office unaware that she carried them. More recently a $15,000 radium capsule disappeared from a Buffalo industrial plant. A few months earlier tiny radium pellets vanished within the same week from plants in Montreal and Philadelphia. A special "detective" now traces such lost treasure —the Geiger-Mueller counter, a device that translates radium rays into staticlike clicks on earphones. It performs miracles of radium recovery, often leading diligent searchers to ash heaps and sewers where medical bandages and sweepings end their travels.

Well Guarded, It Often Escapes

The paradoxes of radium are dramatic. First: Although always closely watched because of its value and the danger of exposure to its unguarded rays, the metal has escaped in Houdini fashion in scores of cases. Explanation lies in the microscopic size of radium units used in medicine and industry.

Second paradox: The London hospital's buried radium supply is small, but it is also large. It weighs approximately one-half gram, or 1/900 of a pound. There have been only about 2,500 half-grams of radium—less than three pounds—produced in the world since Marie and Pierre Curie, at the turn of the century, set about their two-year labor of isolating silvery, metallic radium by gradually removing all other elements from eight tons of Bohemian pitchblende. One-half gram is thus no insignificant part of the world supply.

Of Known Weight, But Never Weighed

Third paradox: Although it is known that not quite three pounds of radium have been produced, radium has never been put on the scales and weighed. The element is refined not into pure metallic form, but into a radium salt concentrate. The weight of the radium is calculated by measurement of its rays.

Fourth paradox: Three pounds is not much, but it is too much. The metal's remarkable and useful radioactivity, caused by constant explosion of atoms, lasts for many centuries; only about half of it is spent in 2,000 years. A decade ago the radon seed was invented. This consists of a tiny capsule of platinum containing captive particles of an active gas given off by radium. The gas enables the benefits of radium rays to be obtained independently of radium itself. This invention makes a little radium go a long, long way. Now much of Europe's radium is fugitive from the war and has taken shelter in the United States. So America's present abundance appears to be greater than the demand.

Fifth paradox: Although America's market is oversupplied, radium is price-tagged at nearly $30,000 a gram—a rate that makes the world's three pounds worth $40,000,000. Modern refining is no great modification of the original tedious and complicated Curie process. Testing and measuring, packaging in sealed tubes of platinum, and other expensive production steps have contributed to the high market price.

UMI

Mother), 2,247-foot peak east of the town, appears inactive. On the slopes of Turanguna (South Daughter), the 1,621-foot peak to the southeast, smolders the active crater, Tavurvur. A theatrical backdrop for Rabaul, they have brought death and destruction many times.

Disastrous eruptions, climaxed by that in 1937, determined the transfer of the Administration from Rabaul to Lae on the northeast coast of New Guinea. This move was in process when the invasion came.

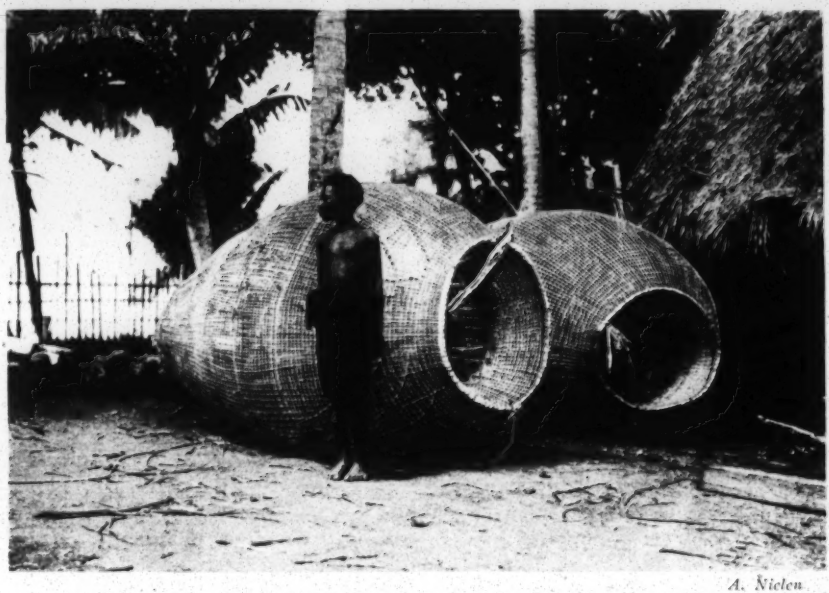
Rabaul is too young to have seen the eruption of 1878 which tossed Volcano Island up from the bottom of Blanche Bay. But in the 34 years since the town was born it has been appreciably shaken on an average of 20 times a year. The 1937 eruption blew a volcanic cone up in Volcano Island which scattered lava for miles around, built the little islet up to a 600-foot peak, and transformed it into a peninsula by filling in the space between the island and the mainland.

Rabaul has no dry season. During the period of the southeast trade winds—from May to October—rainfall is light. During the northwest monsoons, from November to April, the rain is heavy and constant. The year's average is over 7 feet. Strong winds sweep over, but the town is outside the hurricane area.

Note: Rabaul may be located on a large-scale inset of the Bismarck Archipelago on the Society's Map of the Pacific Ocean.

See also "Treasure Islands of Australasia," in the *National Geographic Magazine* for June, 1942*; and "New Britain: New Step on the Road to Tokyo," in the GEOGRAPHIC SCHOOL BULLETINS, January 10, 1944.

Bulletin No. 3, April 24, 1944.



A. Nielen

INSTEAD OF GOING TO MARKET, BASKETS GO FISHING AT RABAUL

These oval baskets, taller than the saronged fisher boy standing beside them, are neither Easter eggs nor garden-party lanterns. They are fish traps contrived by Papuan coastal villagers whose chief occupation is fishing, and whose principal diet is fish. Woven of bamboo strips or of rattan strands, they are anchored by stone-filled rattan cages and held just below the water's surface. The cable attaching the trap to the anchor is made of pliable rattan strands twisted together like a rope. When the trap is used in deep water, this mooring line may be 300 or 400 yards long and as thick as a man's arm. A bamboo stick is fastened mastwise to the deep-water trap to show the fisherman where to retrieve his basket of fish. In peacetime, they bobbed about in swampy places off the coconut groves lining the shore approaches to Rabaul, or stuck their masts above the surface of the deeper water in the bay.

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The Coconut Palm Serves in War and Peace

ASK any soldier or sailor returned from tropical battlefronts. A fighting man's best friend is a coconut palm. Hungry, thirsty, hiding from an enemy, or yearning for shelter from sunburn? The coconut palm is what he needs.

This wartime discovery by farflung Americans has been a peacetime stand-by for the entire tropical belt of the world's population. Coconut trees can supply practically all needs of native inhabitants on the thousands of coral islands dotting the South Pacific war zone.

This tree almost alone can make "desert islands" habitable, providing food, drink, clothing, shelter, and materials for international trade. The trade in copra —the dried meat of the coconut—has shown a war-quickened pace throughout the palm-shaded belt because the oil extracted from copra makes glycerine for explosives (illustration, next page).

Salad-Making Killed Many Trees

The edible part of the coconut is well known in the United States, either taken in fresh, fragrant chunks from a newly cracked shell or encountered in shredded form in candy and pastry. People who live in the coconut tree's shade also eat the green nut. Its meat is like the white of a soft-boiled egg. The pulp of young coconuts is an approved baby food among many tropical peoples.

Unopened leaves from the crown of the coconut palm can be sliced to make a fresh green salad. Early New England whalers, foraging for food in mid-ocean, called it sailor's cabbage. It can be obtained only at the expense of killing the tree. Now it is known as millionaire's salad—though listed less sensationally on hotel menus as heart-of-palm salad—because a tree now has a money value of $25 or more.

War-wrecked palm trees on one of the South Pacific islands supplied heart-of-palm salad to add local color to the 1943 Thanksgiving dinner of the U. S. Marines occupying the area.

Pigs and chickens in the South Seas thrive on coconut meat. In the United States, where thousands of tons of the meat are processed to make coconut oil, the residue is fed to cattle, pigs, sheep, and poultry.

Coral islanders use coconut meat also as fish bait. From the fiber of the coconut husk they make the cord for fish nets. The fiber also goes into baskets and mats.

Milk and Water, Cups and Water Bottles from Same Treee

When coconuts have reached their full size, even before they are ripe, they contain about a pint of cool, refreshing liquid. American soldiers flavor it with lime juice for a mixed-while-you-wait beverage. Another coconut drink is the sweet milk-like sap from severed flower stalks of the palm. When fermented, this becomes intoxicating.

Palms also catch drinking water. In a bend of the tree the islanders wedge the butt end of coconut leaves, which collect and funnel rainwater into receptacles.

Water bottles and drinking cups are made from the shells of the ripe nut. Bottles are produced by scooping the meat out through the eye end of the nut. Half-shells for cups are polished with the nut oil and become ebony-colored with use. Shells also are carved into combs, buttons, buckles, lapel pins, and other articles.

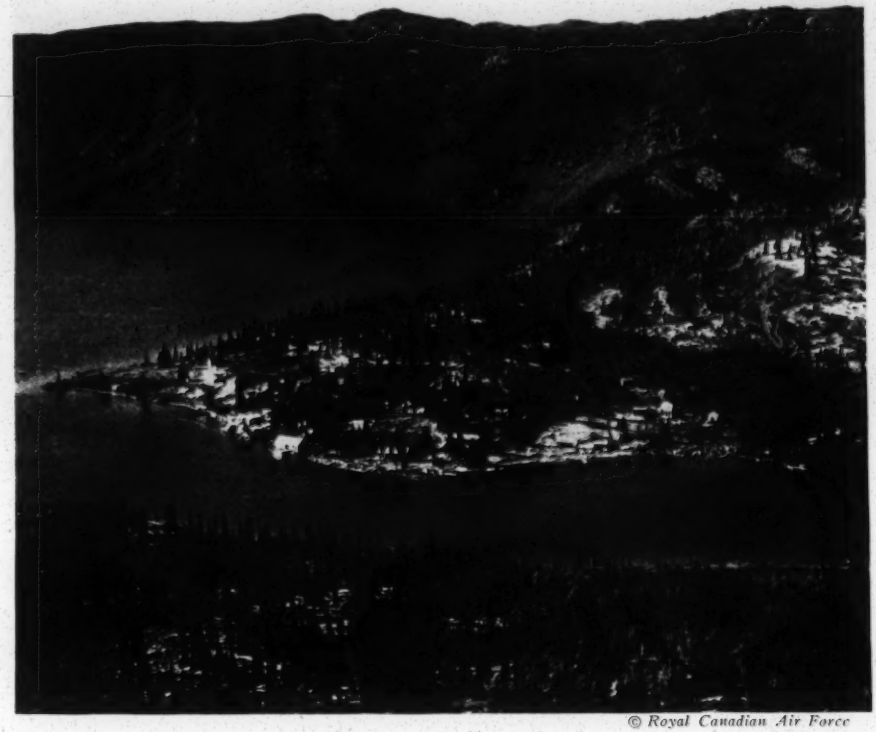
UMI

Sixth paradox: Price per gram in these high-cost-of-living days is little more than half the $50,000 price that held during the depression of the early 1930's. In addition to the radon seed development, the amount of refined radium has doubled since 1935 to push down the price. The Great Bear Lake pitchblende ore field (illustration, below) in the permanently frozen sub-Arctic northwestern region of Canada has supplemented radium production from ore of the Belgian Congo and Czechoslovakia.

Ten per cent of radium's use is in making luminous coatings for clock hands, gun sights, and military instruments. Five per cent works in other industrial jobs, such as that of detecting flaws in metals.

The main use—85 per cent—is in medical treatment to destroy malignant tissues. There, again, is a paradox: radium's No. 1 job is tissue destruction to make possible normal tissue construction.

Bulletin No. 4, April 24, 1944.



© Royal Canadian Air Force

ON GREAT BEAR LAKE STANDS THE RADIUM CAPITAL OF THE UNITED NATIONS

A few miles south of the Arctic Circle, among trees that are thinning out to Arctic barrenness, stands the mining town of Cameron Bay, on Great Bear Lake, the center for Canada's radium production. This is the chief source available to the United Nations, since the Nazis have taken over the Joachimstal works in Czechoslovakia and the refineries in Belgium which processed Belgian Congo ores. By a cartel agreement in 1939, Canada was to produce 40 per cent of the world's output, the Belgian Congo 60 per cent. Since the outbreak of war, the Canadian government has taken over the Great Bear Lake works to increase the output. The mine's discoverer, Gilbert LaBine, in 1929 was looking for silver but found a mineral more precious than gold—veins of lustrous black radium-bearing pitchblende threading through the perpetually frozen ground. He reached the site by air; the mining equipment and camping supplies were brought in by air; now the ore, partially concentrated, is carried to the Port Hope refinery by air.

Huts of islanders are often thatched with coconut palm leaves. The trunk of the palm tree supplies posts and rafters; they are tied together with ropes woven of coconut fiber.

From the palm tree trunks the natives also make their dugout canoes. The wood can be hollowed out with a stone adz.

Note: Islands in the Pacific where the coconut palm plays an important part in the economy of the people are shown on the Society's Map of the Pacific Ocean and the Bay of Bengal.

For further information on these islands, see in the *National Geographic Magazine:* "At Ease in the South Seas," January, 1944; "Revealing Earth's Mightiest Ocean," September, 1943; "War Finds Its Way to Gilbert Islands," January, 1943; "Treasure Islands of Australasia," June, 1942*; "Facts About the Philippines," February, 1942*; and "Airplanes Come to the Isles of Spice," May, 1941*.

See also, in the GEOGRAPHIC SCHOOL BULLETINS, November 10, 1941: "Strategic Materials (No. 10): Coconut Waste That Saves Lives."

Bulletin No. 5, April 24, 1944.

Maynard Owen Williams

MORE THAN COPRA HANGS IN THE BALANCE IN THE INDIES

In the past century the coconut has become a raw material of industry, its oil being used in soap, margarine, and explosives. The meats are scooped out of split coconuts, dried to leathery toughness, and strung together for marketing. This Malay merchant in the Netherlands Indies was photographed before the war weighing strings of bowl-shaped pieces of copra, while a Chinese records the weight and price in a book. Since the invasion of the Indies, their resources—including copra—have been confiscated to supply the Jap war effort.